

Unit 7 Key

$$\begin{array}{l}
 1. \quad 4x - 17 = 31 \\
 \quad +17 \quad +17 \\
 \hline
 \quad 4x = 48 \\
 \quad x = 12
 \end{array}
 \left\{
 \begin{array}{l}
 4(12) - 17 \\
 48 - 17 \\
 31 = 31 \\
 \checkmark
 \end{array}
 \right.$$

$$\begin{array}{l}
 2. \quad 7 = 3 + \frac{x}{6} \\
 \quad -3 \quad -3 \\
 \hline
 \quad 4 = \frac{x}{6} \\
 \quad x = 24
 \end{array}
 \left\{
 \begin{array}{l}
 24/6 = \\
 4 + 3 \\
 7 = 7 \checkmark
 \end{array}
 \right.$$

$$\begin{array}{l}
 3. \quad 9n + 18 = 81 \\
 \quad -18 \quad -18 \\
 \hline
 \quad 9n = 63 \\
 \quad n = 7
 \end{array}
 \left\{
 \begin{array}{l}
 9(7) + 18 \\
 63 + 18 \\
 81 = 81 \checkmark
 \end{array}
 \right.$$

$$\begin{array}{l}
 4. \quad 25 - 13F = -14 \\
 \quad -25 \quad -25 \\
 \hline
 \quad -13F = -39 \\
 \quad F = 3
 \end{array}
 \left\{
 \begin{array}{l}
 25 - 13(3) \\
 25 - 39 \\
 -14 = -14 \checkmark
 \end{array}
 \right.$$

$$\begin{array}{l}
 5. \quad 0 = 5(K + 9) \\
 \quad K + 9 = 0 \\
 \quad K = -9
 \end{array}
 \left\{
 \begin{array}{l}
 5(-9 + 9) \\
 5(0) \\
 0 = 0 \checkmark
 \end{array}
 \right.$$

$$\begin{array}{l}
 6. \quad 9 - 3(n - 5) = 30 \\
 \quad 9 + (-3)(n + (-5)) = 30 \\
 \quad 9 + (-3n) + 15 = 30 \\
 \quad -3n + 24 = 30 \\
 \quad \quad -24 \quad -24 \\
 \quad -3n = 6 \\
 \quad n = -2
 \end{array}
 \left\{
 \begin{array}{l}
 9 - 3(-2 - 5) \\
 9 - 3(-7) \\
 9 - (-21) \\
 30 = 30 \checkmark
 \end{array}
 \right.$$

$$\begin{array}{l}
 7. \quad 4(4 - a) = 8 \\
 \quad 16 - 4a = 8 \\
 \quad -16 \quad -16 \\
 \hline
 \quad -4a = -8 \\
 \quad a = 2
 \end{array}
 \left\{
 \begin{array}{l}
 4(4 - 2) \\
 4(2) \\
 8 = 8 \\
 \checkmark
 \end{array}
 \right.$$

$$\begin{array}{l}
 8. \quad 4p + 5 - 7p = -1 \\
 \quad -3p + 5 = -1 \\
 \quad \quad -5 \quad -5 \\
 \hline
 \quad -3p = -6 \\
 \quad p = 2
 \end{array}
 \left\{
 \begin{array}{l}
 4(2) + 5 - 7(2) \\
 8 + 5 - 14 \\
 13 - 14 \\
 -1 = -1 \checkmark
 \end{array}
 \right.$$

$$\begin{array}{l}
 9. \quad -21 = 3 - 4n + n \\
 \quad -21 = 3 - 3n \\
 \quad -3 \quad -3 \\
 \hline
 \quad -24 = -3n \\
 \quad n = 8
 \end{array}
 \left\{
 \begin{array}{l}
 3 - 4(8) + 8 \\
 3 - 32 + 8 \\
 -29 + 8 \\
 -21 = -21 \checkmark
 \end{array}
 \right.$$

$$\begin{array}{lcl}
 10. & \begin{array}{l} 154 = 6 + 4(5 + 8x) \\ -6 \quad -6 \\ 148 = 4(5 + 8x) \\ 148 = 20 + 32x \\ 128 = 32x \\ \boxed{x = 4} \end{array} & \left\{ \begin{array}{l} 6 + 4(5 + 8(4)) \\ 6 + 4(5 + 32) \\ 6 + 4(37) \\ 6 + 148 \\ 154 = 154 \checkmark \end{array} \right.
 \end{array}$$

$$\begin{array}{lcl}
 11. & \begin{array}{l} -111 = 3(4v - 5) \\ -37 = 4v - 5 \\ +5 \quad +5 \\ -32 = 4v \\ \boxed{v = -8} \end{array} & \left\{ \begin{array}{l} 3(4 \cdot -8 - 5) \\ 3(-32 - 5) \\ 3(-37) \\ -111 = -111 \checkmark \end{array} \right.
 \end{array}$$

$$\begin{array}{lcl}
 12. & \begin{array}{l} -7 - 4(3a + 8) = 87 \\ -7 - 12a - 32 = -87 \\ -12a - 39 = -87 \\ +39 \quad +39 \\ -12a = -48 \\ a = 4 \end{array} & \left\{ \begin{array}{l} -7 - 4(3 \cdot 4 + 8) \\ -7 - 4(12 + 8) \\ -7 - 4(20) \\ -7 - 80 \\ -87 = -87 \checkmark \end{array} \right.
 \end{array}$$

$$\begin{array}{lcl}
 13. & \begin{array}{l} -15.3 = -7.5K + 55.2 \\ -153 = -75K + 552 \\ -552 \quad -552 \\ -705 = -75K \\ K = 9.4 \end{array} & \left\{ \begin{array}{l} -7.5(9.4) + 55.2 \\ -70.5 + 55.2 \\ -15.3 = -15.3 \checkmark \end{array} \right.
 \end{array}$$

$$\begin{array}{lcl}
 14. & \begin{array}{l} (14 = \frac{2}{9}y - 15)9 \\ 126 = 2y - 135 \\ +135 \quad +135 \\ 261 = 2y \\ \boxed{y = 130.5} \end{array} & \left\{ \begin{array}{l} \frac{2}{9}(130\frac{1}{2}) - 15 \\ \frac{2}{9} \cdot \frac{261}{2} - 15 \\ 29 - 15 \\ 14 = 14 \checkmark \end{array} \right.
 \end{array}$$

$$\begin{aligned}
 15. \quad & \left(\frac{1}{5}y + 12 = \frac{9}{10} \right) 10 \\
 & 2y + 120 = 9 \\
 & 2y = -111 \\
 & \boxed{y = -55\frac{1}{2}}
 \end{aligned}$$

$$\begin{aligned}
 & \left\{ \begin{aligned} & \frac{1}{5} \cdot \frac{-111}{2} + 12 \\ & \frac{-111}{10} + \frac{120}{10} \\ & \frac{+9}{10} = \frac{9}{10} \checkmark \end{aligned} \right.
 \end{aligned}$$

$$\begin{aligned}
 16. \quad & -8.3 = 0.9x - 0.2 \\
 & -83 = 9x - 2 \\
 & \quad +2 \quad \quad +2 \\
 & -81 = 9x \\
 & \boxed{x = -9}
 \end{aligned}$$

$$\begin{aligned}
 & \left\{ \begin{aligned} & 0.9(-9) - 0.2 \\ & -8.1 - 0.2 \\ & -8.3 = -8.3 \checkmark \end{aligned} \right.
 \end{aligned}$$

$$\begin{aligned}
 17. \quad & \text{Let } x = x \\
 & \boxed{4x - 7 = 21}
 \end{aligned}$$

$$\begin{aligned}
 \text{Solve: } & 4x = 28 \\
 & \boxed{x = 7}
 \end{aligned}$$

$$\begin{aligned}
 18. \quad & \text{Let } x = \text{cost each pen} \\
 & \boxed{24 - 4x = 14}
 \end{aligned}$$

$$\begin{aligned}
 \text{Solve: } & \\
 & -4x = -10 \\
 & \boxed{x = 2.50}
 \end{aligned}$$

$$19. \quad \text{Let } x = \text{cost sandwich}$$

$$\boxed{3x + 1.25 = 12.35}$$

$$\begin{aligned}
 & 3x = 11.1 \\
 & \boxed{x = \$3.70}
 \end{aligned}$$